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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/022,666	12/17/2001	Andre Van Schyndel	NTL-3.2.178/4233(14915RO)	1810
26345	7590	10/22/2003	EXAMINER	
GIBBONS, DEL DEO, DOLAN, GRIFFINGER & VECCHIONE 1 RIVERFRONT PLAZA NEWARK, NJ 07102-5497			LE, TOAN M	
			ART UNIT	PAPER NUMBER
			2863	

DATE MAILED: 10/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/022,666

Applicant(s)

SCHYNDEL, ANDRE VAN

Examiner

Toan M Le

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) g.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 8-15, and 17-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Davies.

Referring to claims 1 and 10, Davies discloses a method and an apparatus for compensating, in the electrical domain, for chromatic dispersion of an amplitude modulated optical signal (col. 4, lines 12-17; and col. 6, lines 60-65), comprising the steps of: a) converting the amplitude modulated optical signal to an electrical signal (col. 5, lines 9-50; col. 7, lines 2-26); b) amplifying part of the spectrum of the electrical signal by a factor derived from its frequency (col. 7, lines 30-47; col. 8, lines 32-35; and col. 9, lines 13-15); and selectively inverting the phase of regions of the spectrum to thereby allow recovery of the transmitted data (col. 7, lines 59-61; col. 8, lines 40-46; and col. 10, lines 1-4).

As to claims 2 and 11, Davies discloses a method of compensating, in the electrical domain, for chromatic dispersion of an optical signal, wherein the step of amplifying and selectively inverting is described by a transfer function represented by

$$\sec(\pi D L \lambda_0^2 f^2 / c)$$

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where D is the dispersion, L is the length of the fiber, λ_0 is the wavelength of the light source, c is the speed of light, and f is the frequency of the Fourier component (col. 7, lines 66-67; and col. 8, lines 1-9).

Referring to claims 3, 6, 12, and 15, Davies discloses a method and an apparatus for compensating, in the electrical domain, for chromatic dispersion of an optical signal, wherein the optical signal comprises a non-infinite extinction ratio, which is present in the optical prior to transmission (col. 7, lines 6-16).

As to claims 4-5 and 13-14, Davies discloses a method and an apparatus for compensating, in the electrical domain, for chromatic dispersion of an optical signal, further comprising the step of modifying the electrical signal by introducing a non-linear element, which is a square root of the electrical signal prior to application of the transfer function (col. 7, lines 6-26).

Referring to claims 8 and 17, Davies discloses a method and an apparatus for compensating, in the electrical domain, for chromatic dispersion of an optical signal, wherein the compensation method is implemented in software (col. 7, lines 11-13; figure 2).

As to claims 9 and 18, Davies discloses a method and an apparatus for compensating, in the electrical domain, for chromatic dispersion of an optical signal, wherein the transfer function is used as a diagnostic tool for measuring the chromatic dispersion characteristics of an optical channel (col. 6, lines 39-50; equation 10).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davies in view of Kawada et al..

Referring to claims 7 and 16, Davies discloses a method and an apparatus for compensating, in the electrical domain, for chromatic dispersion of an optical signal, wherein the transfer function is implemented by means of antidispersive filter 32 (figure 2).

Davies does not mention the transfer function is implemented by means of an FIR-IIR filter.

Kawada et al. disclose an adaptive filter in the form of FIR-IIR filter for echo cancellation (col. 2, lines 27-41; and col. 6, lines 35-36).

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have applied FIR-IIR filter as described in the Kawada et al. reference into the method of Davies for minimizing phase dispersion to maximize the recovery of the transmitted data signal.

Remarks:

Response to Arguments

Applicant's arguments filed 7/31/03 have been fully considered but they are not persuasive.

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Regarding to claims 1 and 10, Applicant argues that “Davies discloses a ‘Minimum Phase Dispersion Compensator’ that is limited for use with single sideband signals. Claims 1 and 10 of the present application have been amended to include that that present invention is directed to a method of and apparatus for compensating for chromatic dispersion of an amplitude modulated, optical signal.”

Davies discloses a method incorporated into an apparatus for compensating for chromatic dispersion of an amplitude modulated, optical signal (col. 5, lines 9-50; col. 7, lines 2-26).

Conclusion

THIS ACTION IS MADE FINAL.

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan M Le whose telephone number is (703) 305-4016. The examiner can normally be reached on Monday through Friday from 9:00 A.M. to 5:30 P.M..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (703) 308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.

Toan Le

October 10, 2003



John Barlow
Supervisory Patent Examiner
Technology Center 2800